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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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HEWLETT-PACKARD COMPANY
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EXAMINER

ALANKO, ANITA KAREN

ART UNIT	PAPER NUMBER
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1765

DATE MAILED: 09/15/2003

6

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/061,514

Applicant(s)

HESS, JEFFERY S.

Examiner

Anita K Alanko

Art Unit

1765

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 72-112 is/are pending in the application.
- 4a) Of the above claim(s) 99-112 is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 72-81,91 and 93-96 is/are rejected.
- 7) ☒ Claim(s) 82,92,97 and 98 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on ____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). ____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4,5 6) ☐ Other: _____

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 72-98, drawn to a method, classified in class 216, subclass 27.
- II. Claims 99-112, drawn to a substrate, classified in class 428, subclass 1+.

The inventions are distinct, each from the other because of the following reasons:

Inventions I and II are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case the product can be made by a different process such as etching two substrate with openings and bonding to form the substrate.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Scott Lund on June 30, 2003 a provisional election was made with traverse to prosecute the invention of Group I, claims 72-98. Affirmation of this election must be made by applicant in replying to this Office action. Claims 99-112 are withdrawn from further consideration by the examiner, 37 CFR 1.142(b), as being drawn to a non-elected invention.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 72-81, 83-91 are rejected under 35 U.S.C. 102(b) as being anticipated by Kamisuke et al (JP 4-312853 A).

Kamisuke discloses a method of forming an opening through a substrate 31, the method comprising (Fig. 3a-3f):

etching a first portion of the opening into the substrate 31 from a first side (through mask layer 35, Fig.3e);

etching a plurality of second portions 310 of the opening into the substrate from a second side opposite the first side (through mask 34, Fig.3e);

continued etching of at least one of the first portion and the plurality of second portions of the opening to the other of the first portion and the plurality of second portions of the opening (Fig.3f); and

overetching each of the second portions of the opening at an interface between the first portion and each of the second portions of the opening, including communicating 311 each of the second portions with an adjacent one of the second portions (Fig.3f, the continued etching to increase the size of the through-hole 311).

As to claims 83-85, Kamisuke discloses anisotropic wet etching (paragraph [0011]).

As to claim 86, Kamisuke discloses to form slots (Fig.3e,4a-4b).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 72-81, 83-91, 93-97 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kamisuke et al (JP 4-312853 A).

The discussion of Kamisuke from above is repeated here.

As to claims 93-96, Kamisuke does not explicitly disclose forming a pair of first slots and a second plurality of second slots. However, it is well known that when processing a relatively large silicon substrate compared to the size of the ink jet slots, that multiple printheads are formed from a single wafer, and therefore multiple slots are formed. It would have been obvious to one with ordinary skill in the art to form multiple first and second slots in the method of Kamisuke in order to save time and money by processing multiple printheads from a single wafer. It would have been still further obvious one with ordinary skill in the art to communicate and align as cited in claim 93-96 in order to form multiple devices since Kamisuke teaches that slots from first and second sides should be aligned and communicate with each other.

Allowable Subject Matter

Claims 82, 92, 97-98 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not teach or suggest to form diverging openings or slots, as in the context of claim 82 or 92.

The closest prior art, Kamisuke, discloses forming converging openings or slots, and since the openings are square-shaped (Fig.4), there is no motivation to change the shape of the opening to include diverging openings or slots.

The following is a statement of reasons for the indication of allowable subject matter: the prior art does not teach or suggest to form staggered or overlapping slots, as in the context of claims 97 or 98.

The closest prior art, Kamisuke, suggests to form aligned slots, however there is no motivation to change the shape of the opening to include staggered or overlapping slots, as in the context of claims 97-98.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. The cited art shows methods of etching to form printheads.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anita K Alanko whose telephone number is 703-305-7708. The examiner can normally be reached on Monday, Tuesday and Friday, 8:00 am-4:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nadine Norton can be reached on 703-305-2667. The fax phone number for the organization where this application or proceeding is assigned is (703) 872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703-308-0661.

Anita K. Alanko

Anita K Alanko
Primary Examiner
Art Unit 1765